

NORTH AMERICAN APION: THE APION SPRETISSIMUM GROUP (COLEOPTERA: CURCULIONIDAE)¹

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This paper is a continuation of the revision of the 260 species of *Apion* occurring in North America. Kissinger (1959a) presents a key to the 29 species groups of *Apion* known from this region. Explanation of abbreviations and measurements is given by Kissinger (1957, 1959b).

I am indebted to Mr. R. T. Thompson for a loan of specimens studied by D. Sharp and H. Wagner.

Seven species are known to belong to the *spretissimum* group, which ranges from southeastern United States to southern Brazil. Only one species, *Apion aculeatum* Fall, was reared; it was from the blooms of *Mimosa pigra*.

The major distinctive structural characters of the group are the secondary sexual modifications of the tarsi of the male in which the first segment of mesotarsus is produced into a spine on the posterior medial surface, the oblique dorsal anterior margin of the antennal scrobe, and the acute basal lateral expansion of the prothorax. Other characters are as follows:

Body minute, less than 1.75 mm. long; integument and legs black (*aculeatum* more or less piceous with front legs brownish yellow); sexual dimorphism of beak quite marked; antennae inserted close to eyes; frons narrow with two rows of coarse punctures; eyes moderately prominent; apex of prothorax distinctly narrower than base and noticeably constricted; femur and tarsus moderately slender; third tarsal segment strongly bilobed; claw with acute basal tooth.

The species in this group are rather difficult to distinguish from each other. As can be seen in the accompanying key, some of the species are very distinctive. But for the most part, it is necessary to rely upon characters that either appear to be weak, as the comparison of the width of the frons to the width of the dorsal tip of the beak, or else are hard to state concisely in unequivocal terms, such as the nature of the sculpturing of the integument or vestiture. Comparatively little material of this group has been available for study with the exception of *A. spretissimum* Sharp, which is abundant in Mexico.

KEY TO SPECIES OF THE SPRETISSIMUM GROUP³

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|----|--|----------------|
| 1. | Males, segment 1 of mesotarsus with a spine on inner margin ----- | 2 |
| | Females, segment 1 of mesotarsus without spine ----- | 7 |
| 2. | Scales on elytral interval 2 uniserial or nearly so (Fig. 5), whitish; legs piceous or black ----- | 3 |
| | Scales on elytral interval 2 biserial (Fig. 4), yellowish; front tibia dark brownish yellow; frons narrower than dorsal tip of beak; beak one-fourth longer than prothorax ----- | ACULEATUM Fall |

¹ Study aided by grant G 19,600 from the National Science Foundation.

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³ *Apion parvulum* Gerstaecker is not included in the key but is mentioned in the discussion under *A. spretissimum* Sharp.

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|-------|--|--------------------|
| 3. | Last visible sternite flat----- | 4 |
| | Last visible sternite impressed apically, with tuft of cilia on lateral border of impression (Fig. 8); frons not narrower than dorsal tip of beak; beak one-fourth longer than prothorax ----- | PRAEDITUM Sharp |
| 4. | Frons narrower than dorsal tip of beak----- | 5 |
| | Frons not narrower than dorsal tip of beak----- | 6 |
| 5. | Spine on segment 1 of mesotarsus blunt apically; beak at middle with scales prominent, 0.03 mm. or more long (Fig. 3)----- | FIBULIPES Fall |
| | Spine on segment 1 of mesotarsus acute; beak at middle with minute scales not more than 0.02 mm. long (Fig. 2)----- | PERSIMILE Fall |
| 6. | Scales on frons narrow, hairlike (Fig. 7); length 1.40 to 1.75 mm.---- | DISSIMILIPES Sharp |
| | Scales on frons coarse, quite broad (Fig. 6); length 1.10 to 1.50 mm. SPRETISSIMUM Sharp | |
| 7(1). | Scales on elytral interval 2 uniserial or nearly so, whitish----- | 8 |
| | Scales on elytral interval 2 biserial, yellowish; beak as long as head and prothorax combined, curved, sculptured beyond middle----- | ACULEATUM Fall |
| 8. | Beak beyond middle with obvious punctures ----- | 9 |
| | Beak slightly beyond insertion of antenna nearly smooth, with sparse, minute punctules, very strongly curved and much shorter than head and prothorax combined ----- | SPRETISSIMUM Sharp |
| 9. | Beak obviously shorter than head and prothorax combined; antenna inserted at distance from eye less than width of frons ----- | 10 |
| | Beak equal to or longer than head and prothorax combined; antenna inserted at distance from eye greater than width of frons----- | 11 |
| 10. | Length 1.60 to 1.75 mm.; sutural interval with biserial scales; Arizona and western Mexico ----- | FIBULIPES Fall |
| | Length 1.50 to 1.65 mm.; sutural interval with uniserial scales; southeastern U. S. to eastern Texas ----- | PERSIMILE Fall |
| 11. | Pronotum with deep punctures and deep basal forea, in side view dorsal surface of prothorax quite strongly arcuate; in dorsal view apical third of beak nearly parallel-sided and in apical half with coarse, elongate punctures----- | DISSIMILIPES Sharp |
| | Pronotum with fine, shallow punctures and obsolete basal forea, in side view dorsal surfaces of prothorax slightly arcuate; in dorsal view apical third of beak slightly expanded toward tip and in apical half with fine, sparse punctures -- | PRAEDITUM Sharp |

Apion aculeatum Fall

FIG. 4

Apion aculeatum Fall, 1898, Trans. American Ent. Soc. 25:171. [Lectotype: male, Brownsville, Texas, VI, Wickham, in Fall Colln., M.C.Z. no. 25070.]

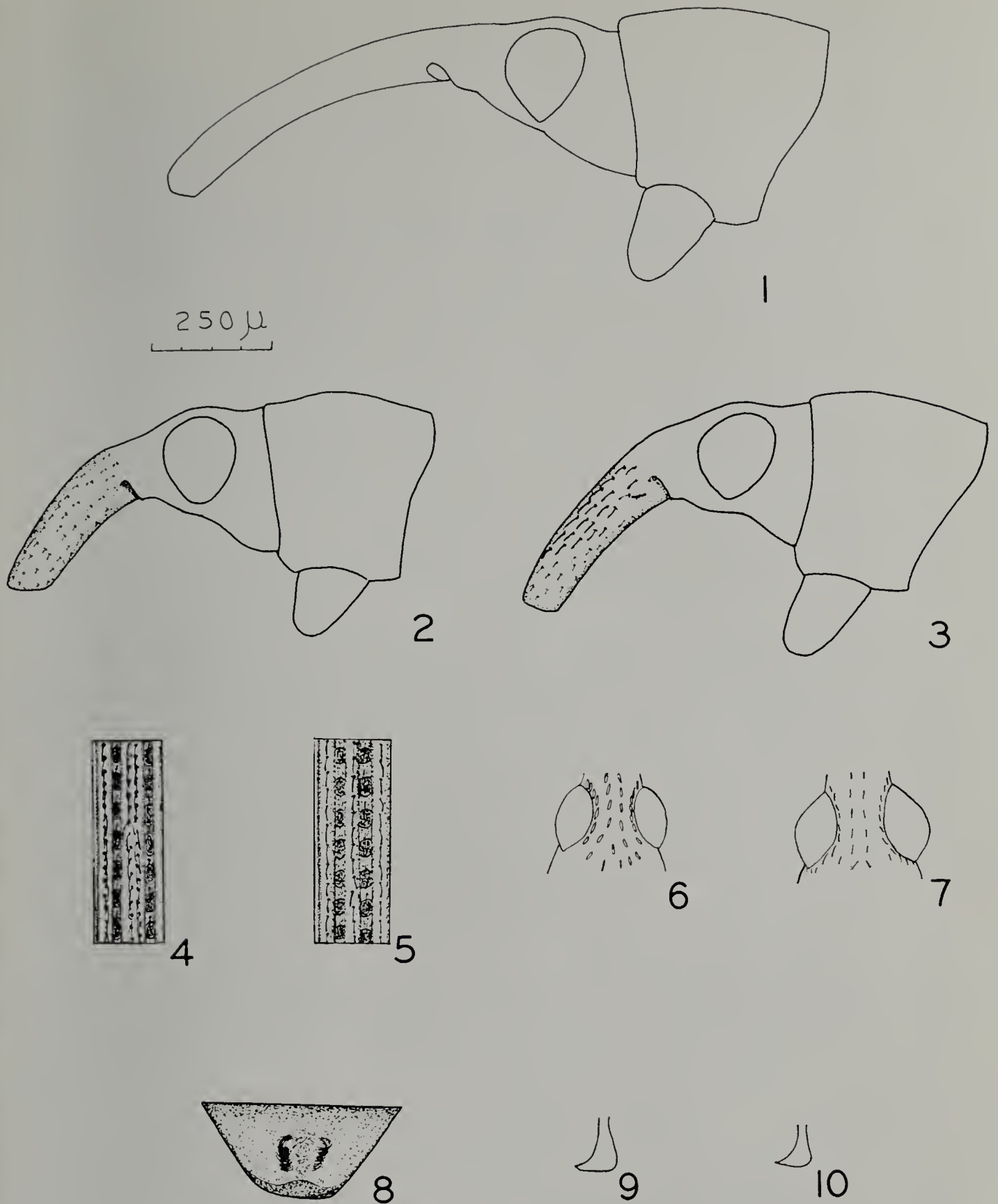
This species is easily distinguished from the other members of the group by the biserial yellowish scales on elytral intervals 2, 4, and 6.

I hereby designate the lectotype of this species as the male specimen in the Fall Collection labeled, "Brownsville, Tex., VI, Wickham, M.C.Z. 25070." A lectoparatype is in the U. S. National Museum with the same data.

In the U. S. National Museum is material from Brownsville, Texas and Matamoros, Mexico, reared from the bloom of *Mimosa pigra*.

Length: 1.43 to 1.50 mm.; width: 0.62 to 0.75 mm.

Distribution: UNITED STATES: TEXAS: Brownsville, 22 April, 1942, Bibby, ex blooms of *Mimosa pigra* (USNM). MEXICO: TAMAULIPAS: Matamoros, 31 March, 1942, Bibby, ex blooms of *Mimosa pigra* (USNM). VERACRUZ: "Coyame," Lago de Catemaco, June, 1954, D. G. Kissinger (DGK).



Note: The scale of enlargement is the same for the following 10 figures.

FIGURE 1—Lateral view of head and prothorax of female *Apion praeditum* Sharp. FIGURE 2—Same of male *Apion persimile* Fall. FIGURE 3— Same of male *Apion fibulipes* Fall. FIGURE 4—Diagram of scales on intervals 1 and 2 of *Apion aculeatum* Fall, suture is adjacent to left margin. FIGURE 5—Same of *Apion spretissimum* Sharp. FIGURE 6—Diagram of scales on frons of male *Apion spretissimum* Sharp. FIGURE 7—Same of male *Apion dissimilipes* Sharp. FIGURE 8—Diagram of fifth sternite of male *Apion praeditum* Sharp. FIGURE 9—Diagram of spine on first tarsal segment of middle tarsus of male *Apion fibulipes* Fall. FIGURE 10—Same of male *Apion persimile* Fall.

Apion praeditum Sharp

FIGS. 1 and 8

Apion praeditum Sharp, 1890, Biol. Centrali-Americana, Insecta, Coleoptera, 4(3):48. [Type locality here restricted to Aceituno, Guatemala (BMNH)].

Both sexes of this species are quite distinct as can be seen from the characters in the key. The male is quite similar to the male of *spretissimum* but has a comparatively longer beak and finer scales on the frons. The value and uniqueness of the modification of the fifth sternite of the male is clouded by the fact that a male from La Marquesa, Mexico, does not show this modification; otherwise it is nearly identical to a male *praeditum* collected at the same time and place. Three females labelled "Mexico City, Tepeaca, Jalapa Highway, 310 kls" have the beak strongly reflexed above antennal insertion and more arcuate apically, and in dorsal view the beak is not expanded apically; a male collected at the same time shows the usual *praeditum* male fifth sternite modification.

The female is quite similar to that of *dissimilipes* in having a comparatively long beak. In addition to characters in the key, the following may aid in separating females of the two species: *praeditum* has antenna inserted slightly closer to eye at distance about one-fourth greater than width of frons, the eyes are less prominent, laterally body has shorter and slightly coarser scales, and scales on pronotum are shorter 0.02-0.03 mm. long and may be yellow or white; *dissimilipes* has antenna inserted at distance from eye one-half or more than width of frons, beak more curved, the eyes are more prominent, laterally the scales on the body are longer and finer, and scales on pronotum are about 0.03-0.04 mm. long and are white.

Length: 1.37 to 1.87 mm.; *width:* 0.64 to 0.87 mm.

Distribution: MEXICO: JALISCO: 8 mi. E. La. Venta de Mochitiltic, 20 July, 1955, Meadow grass, R. Selander. MEXICO: 1 mi. W. La Marquesa, 8 December, 1948, E. S. Ross (CAS). MICHOACAN: Ciudad Hidalgo, 14 July, 1955, on grass, R. Selander. MORELOS: Cuernavaca (MCZ). NAYARIT: 8 mi SW Santiago turnoff, 21 July, 1955, on grass, R. Selander. PUEBLO: Huauchinango, June, 1957, D. G. Kissinger (DGK). SAN LUIS POTOSI: "Huichihuayan," 25 September, 1938, L. J. Lipovsky (U.K.) VERACRUZ: Cordoba (CAS). DISTRITO FEDERAL: Mexico City, Tepeaca, Jalapa Highway, 310 Kls., Altitude 2200 M., Coniferous Forest (undergrowth), C. F. Dowling (BMNH). GUATEMALA: Aceituno (BMNH), Coban (BMNH), Duenas (BMNH), Guatemala City (CAS, BMNH). NICARAGUA: Chontales (BMNH).

Apion fibulipes Fall

FIGS. 3 and 9

Apion fibulipes Fall, 1898, Trans. American Ent. Soc. 25:172, pl. 5, fig. 18 [Lectotype: male, La Chuparosa, Baja California, Fall Colln., M. C. Z. no. 25094].

I hereby designate the lectotype of this species as the male in Fall's

Collection labeled "La Chuparosa, M. C. Z. no. 25094." A lectoparatype with the same data is in the California Academy of Sciences.

As noted above this species is very similar to *persimile*. Consult the key for characters that aid in separating the two forms.

Length: 1.62 to 1.75 mm.; width: 0.81 to 0.87 mm.

Distribution: UNITED STATES: ARIZONA: 17 mi. W. Fry (or Sierra Vista), 16 August, 1957, C. W. O'Brien (DGK). MEXICO: BAJA CALIFORNIA: "La Chuparosa." SINALOA: Los Mochis, 3 August, 1922 (CAS).

Apion persimile Fall

FIGS. 2 and 10

Apion persimile Fall, 1898, Trans. American Ent. Soc. 25:172, pl. 5, fig. 19 [Lectotype: female, not labeled as to specific locality, probably from "South Atlantic Coast region."]

Lectotype hereby designated as female in Fall's collection labeled "Zimmerman Coll., M. C. Z. no. 25115." Lectoparatypes in J. L. LeConte Coll., M. C. Z. no. 394.

As mentioned by Fall in his original description, this species is very close to *fibulipes*. Present information indicates that the two forms are widely separated geographically. In addition to the information in the key, the scales on the sutural interval of *fibulipes* tend to be biserial while in *persimile* they are uniserial.

Length: 1.50 to 1.62 mm.; width: 0.75 to 0.81 mm.

Distribution: FLORIDA: 2 mi. W. Archer, 23 March 1953, H. F. Howden. LOUISIANA: 20 mi. S. E. Franklin, July, 1954, D. G. Kissinger (DGK); Madison Parish, July, 1932, Sweep, C. F. Rainwater (Tex. A.&M.). MISSISSIPPI: Shuqualak, 16 July 1930, R. H. Beamer (UK). TEXAS: Brazoria Co., 7 June, 1957, H. A. Turner (Tex. A.&M.); Houston, 19 June, 1948, J. L. Ward (USNM); San Antonio, 4 July, 1936, W. D. Field. (UK); Wharton Co., 28 June, 20 July, H. R. Burke (Tex. A.&M.).

Apion dissimilipes Sharp

FIG. 7

Apion dissimilipes Sharp, 1890, Biol. Centrali-Americana Insecta, Coleoptera, 4(3):49. [Type locality here restricted to Guatemala City (BMNH).]

While the female is quite distinctive with its long beak, the male is very similar to the male of *A. spretissimum*. See key and discussion under *A. praeditum* for characters distinguishing female of these two species. The following characters to separate males of *dissimilipes* and *spretissimum* supplement those given in the key: *dissimilipes* has the beak more closely and coarsely punctured, the punctures extending closer to the apex, the tip thus not as polished and less shining; the beak appears to be more robust; the scales on the elytral striae are about as coarse as those on the

intervals; the mesothorax is clothed with longer, finer scales; and the prothorax in dorsal view is more strongly constricted apically and basally, the middle area generally appearing more prominent; *spretissimum* has the beak more finely sculptured and with a longer apical region smooth and polished; beak seems less robust; the scales on the elytral striae are much finer than those on intervals, especially on sides of elytra; the mesothorax is clothed with coarser scales; and the prothorax in dorsal view is nearly parallel-sided at base and the apical constriction is not as pronounced.

Length: 1.43 to 1.75 mm.; width: 0.68 to 0.84 mm.

Distribution: MEXICO: TABASCO: Teapa, February, H. H. Smith (BMNH). GUATEMALA: Guatemala City, Champion, male compared with type by Sharp (BMNH). PANAMA: Volcan de Chiriqui, 25-4000 ft., Champion (BMNH). BRAZIL: Bahia, C. Darwin (BMNH); Pernambuco (BMNH).

Apion spretissimum Sharp

FIGS. 5 and 6

Apion spretissimum Sharp, 1890, Biol. Centrali-Americana, Insecta, Coleoptera, 4(3):48. [Type locality here restricted to Chontales, Nicaragua (BMNH).]

The female of this species is quite distinctive with its short, strongly curved beak, which is smooth and polished in front of the insertion of the antenna; in the basal half the beak may be somewhat alutaceous and with minute, sparse punctures. The male is rather difficult to distinguish from the male of *dissimilipes*; consult key and discussion under *dissimilipes* for characters separating males of these species.

Length: 1.16 to 1.47 mm.; width: 0.56 to 0.68.

Distribution: MEXICO: COAHUILA: Monclova, Dr. Palmer (BMNH). GUERRERO: Amula, 6000 ft., August, H. H. Smith (BMNH); Atoyac, April and May (BMNH). MICHOACAN: 20 mi. E. Morelia, 7 March, 1953, D. G. Kissinger (DGK). MORELOS: Cuernavaca, June (BMNH). PUEBLO: Huauchinango, June, 1954, D. G. Kissinger (DGK). SAN LUIS POTOSI: Tamazunchale, 28 January 1953, D. G. Kissinger (DGK). TABASCO: Teapa, February and March (BMNH). VERACRUZ: Cordoba, 3 February, 1953, June, 1954, D. G. Kissinger (DGK); Jalapa (CAS); Lago de Catemaco, 13 February, 1953, D. G. Kissinger (DGK), "Coyame," June, 1954 (DGK), 20 klm. S. Catemaco, June, 1954 (DGK); Orizaba (CAS); 18 mi. N. San Andres Tuxtla, 6-12 February, 1953, June, 1954, D. G. Kissinger (DGK). GUATEMALA: Aceituno (BMNH); Guatemala City (BMNH, CAS); Livingstone (USNM). BRITISH HONDURAS: "M-tee district" (Region around Manatee Bar and Manatee River some 20-25 miles south of Belize) (MCZ). NICARAGUA: Chontales (BMNH). COSTA RICA: Golfito, 30 October (CAS); "Waldeck," on cacao, 9 April, 1936 (USNM). CANAL ZONE: Barro Colorado Is, (USNM); "Bohio," 7 April, 1911, H. H. Jennings (USNM); Gatun, 3 April, 1911 (USNM); Summit XII 1946, N. L. H. Krauss (BMNH). BRAZIL: Rio de Janeiro, Fry Colln. (BMNH, det. by Wagner as *parvulum* Gerst.)

Four specimens of *Apion parvulum* Gerstaecker (1854) from Brazil were seen which had been determined by the late Hans Wagner, an authority on *Apion*. Two of the specimens, from Rio de Janeiro, are the same as *spretissimum* Sharp. One female, from Bahia, Brazil, according to the label, had been compared with the type of *parvulum*. It differs from *spretissimum* in that the beak is straighter and in side view the beak is wider at the apex than at the middle; also the front legs are paler in color; otherwise the two forms are very similar. The female of *A. spretissimum* has the beak nearly parallel-sided in apical half when viewed from the side; also the front legs are usually piceous but individuals with quite pale legs have been seen. Examination of the type of *parvulum* and of more material from Brazil will be necessary to determine the true relationship of *parvulum* and *spretissimum*.

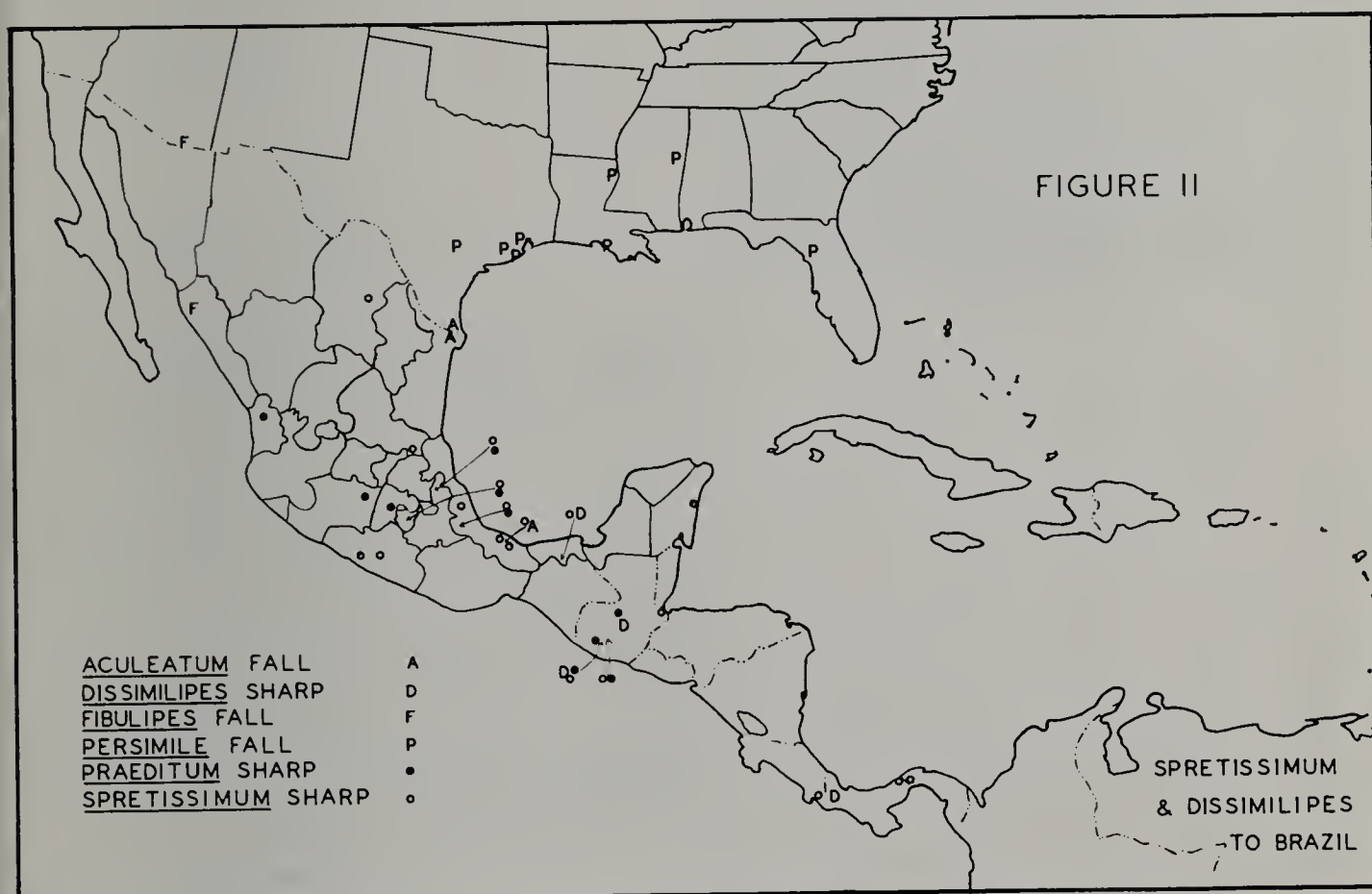


FIGURE 11—Map showing distribution of six members of *Apion spretissimum* Group.

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